

Understanding EPA's Proposed Change to the Duwamish Superfund Site Cleanup Plan, or "ESD" (Explanation of Significant Differences)

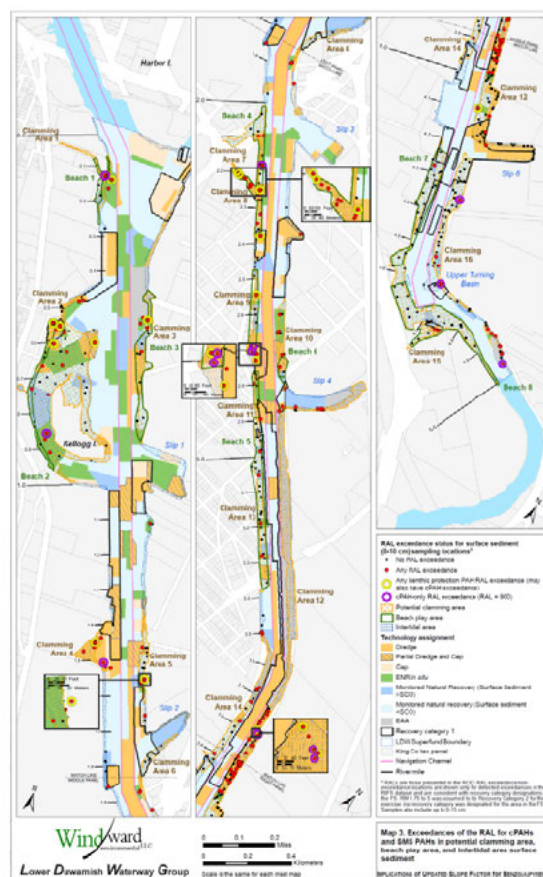
SUMMARY

The U.S. Environmental Protection Agency (EPA) is requesting feedback on a proposed change to the cleanup of the Lower Duwamish Waterway Superfund site. This change would allow for approximately seven times more cPAHs (carcinogenic polycyclic aromatic hydrocarbons) – a cancer-causing group of chemicals – in both sediments and clams. The change is based on new information about the health effects of one of the most toxic cPAHs known as BaP (benzo(a)pyrene). EPA has determined that BaP is seven times less toxic than previously thought. Allowable levels of six other cPAHs would also be increased seven-fold because they are measured in comparison to BaP.

EPA's deadline for comments on this change is April 6; submit by email to Region10@epa.gov (make sure to include "DUWAMISH ESD COMMENTS")

BACKGROUND

EPA named the lower Duwamish River as a federal Superfund site in 2001, which means it must be cleaned up by the parties responsible for polluting it. This includes the City of Seattle, King County, the Port of Seattle and the Boeing Company, among others. More than 40 toxic chemicals in the sediment (mud) in the river bottom must be cleaned up to protect the environment and people's health. The greatest risk to people's health is from eating seafood from the river; there are also health risks for people who play on shoreline beaches or dig in the mud. The chemicals in the river that are most harmful to people include the cPAHs that are the subject of the proposed change.



Map 3. Exceedances of the RAL for cPAHs and SMS PAHs in Potential Clamming Area, Beach Play Area, and Intertidal Area Surface Sediment (Source: LDWG, 2019)

HOW WOULD THIS CHANGE AFFECT THE CLEANUP?

The new cleanup level for cPAHs will allow about seven times more of these chemicals in the river's sediments and clams. Because EPA now believes that cPAHs are not as harmful to people's health as previously thought, they think this change will protect people's health as well as the previous cleanup plan. Cleanup standards for other chemicals that harm people's health or the environment are not being changed at this time.

EPA estimates that the cPAH change will reduce the area of the river needing to be dredged or capped by about five acres (out of 177 currently planned) and will cost about \$1 million less than the current \$342 million estimate. EPA's fact sheet about the change is available here: <https://semspub.epa.gov/work/10/100297807.pdf>

HOW DOES THIS AFFECT ONGOING POLLUTION SOURCE CONTROL?

While EPA is responsible for the cleanup of sediments in the Duwamish, the WA State Department of Ecology (Ecology) is responsible for controlling ongoing sources of pollution in areas that drain to the river. Controlling pollution involves finding sources of any ongoing contamination and taking action to stop or reduce them before they reach and pollute the river. Most of the remaining cleanup of the sediments cannot begin until sources of cPAHs and other contaminants (PCBs, arsenic, and dioxins/furans) are sufficiently controlled so that the river does not become recontaminated and cleanup does not have to be repeated.

Ecology does not expect the new BaP health risk information and EPA's proposed change to affect its pollution source control efforts for the Duwamish. Ecology's regulation of water discharges will continue to comply with State Water Quality Standards, which have NOT changed and continue to use the more conservative BaP toxicity value, in accordance with state law. No new rule-making to change this standard is currently being planned.

The only remaining question is whether EPA's new sediment cleanup level affects how much cPAH in the sediments dissolves into water and changes water quality, which depends on a wide range of factors. The next phase of Ecology's Green-Duwamish "Pollutant Loading Assessment" involves building a model that will simulate the potential effects of contaminants in sediment on water quality.

WHAT ARE cPAHs? WHAT IS BaP?

PAHs are a group of chemicals made by burning wood and fossil fuels like coal, oil, and gas. PAHs break down slowly in the environment and can build up in soils, sediments, and some animals, including clams. Long-term exposure to high levels of some PAHs (known as carcinogenic PAHs or cPAHs) increases the risk of cancer and other diseases. BaP is generally considered to be the most toxic of the cPAHs and is one of the best studied. The health risks of six other cPAHs are calculated based on the toxicity of BaP, rather than on direct testing.

WHY DID THE STANDARD FOR BaP CHANGE?

Every so often EPA updates its health risk information for different chemicals by reviewing the most up to date science and making changes based on new information. In 2017, EPA published revised health risk information for BaP based on a 10-year review of the newer science. They determined that BaP is about seven times less toxic than they previously thought. A technical report on their new assessment is online in EPA's Integrated Risk Assessment System (IRIS):

https://iris.epa.gov/ChemicalLanding/&substance_nmbr=136.

WHAT IS AN EXPLANATION OF SIGNIFICANT DIFFERENCE (ESD)?

An ESD is required for one of three types of changes that EPA can make to an approved Superfund Cleanup Plan, or "Record of Decision" (ROD).

1. "Fundamental changes" require a formal ROD amendment and public comment.
2. "Insignificant changes" can be made with a simple memo and no public comment.
3. In between these are "significant changes" that require an ESD. Public comment is not legally required for a significant change but is being invited by EPA in this case at the recommendation of a group of stakeholders called the "Duwamish Roundtable."

HAS THE NEW ASSESSMENT OF BaP AFFECTED OTHER CLEANUPS?

EPA's revised health risk information led to a 2018 ESD for Oregon's Portland Harbor Superfund site that resulted in 17 fewer acres cleaned up and a savings of \$35 million. Eventually, the new standard will likely be applied to all cPAH cleanup plans in the U.S.

WHAT DO INDEPENDENT SCIENTISTS SAY ABOUT THE NEW INFORMATION?

In order to review the cancer risk of exposure to BaP and other cPAHs, EPA looked at 15 research studies. They excluded 12 that did not test for lifetime exposure, and of the three that were left, they eliminated one more due to its use of less stringent protocols and reporting than the two newest studies. The two remaining studies indicated that BaP is 7-times less toxic than the previous standard used by EPA, while the excluded lifetime study indicated BaP is about 1.5-times more toxic than the previous standard (other studies also indicated a higher cancer risk than the new EPA standard). Although the selection of the two newest studies is consistent with EPA guidelines, UW scientists are concerned that inconsistent results across all the studies means that there is still a high level of uncertainty about the cancer risk of BaP.

Health risk estimates for other cPAHs have long been based on the toxicity of BaP. However, more recent science indicates these assumptions may not be protective and researchers who specialize in cPAHs say each chemical needs to be studied individually.*

* See "Proposed changed to Portland Harbor Superfund," Oregon State University Superfund Research Program (Nov. 2018)

Need more information, language interpretation, or assistance with commenting? Contact the Duwamish River Cleanup Coalition: contact@duwamishcleanup.org

The Duwamish River Cleanup Coalition/Technical Advisory Group (DRCC/TAG) is involved in all aspects of the cleanup of the Duwamish River. We are working to ensure the cleanup meets community standards by restoring environmental health and protecting the fishers and families who use the river as well as reflecting the priorities, values, and will of the people who live and work in the region. DRCC organization was founded in 2001 by community, neighborhood, environmental, tribal, and small business organizations. DRCC is EPA's official Community Advisory Group (CAG).

Do you want to learn more about us? www.duwamishcleanup.org



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Duwamish River Cleanup Coalition